



October 13, 2010

Ms. Mary Nichols
Chair
California Air Resources Board
1001 I Street
Sacramento, CA 95812

SUBJECT: Sacramento Area Council of Governments (SACOG) Sustainable
Communities Strategy Technical Methodology

Dear Ms. Nichols:

SACOG presents the "technical methodology it intends to use to estimate the greenhouse gas emissions from its sustainable communities strategy and, if appropriate, its alternative planning strategy" as required under California Government Code 65080(b)(2)(I)(i).

SACOG is a nationally recognized leader in transportation and land use planning and modeling. SACOG intends to set a positive example for the rest of the state and nation as the one of the first metropolitan planning organizations to adopt a Sustainable Communities Strategy under Senate Bill 375 (SB 375) (Steinberg, 2008). The 2035 Metropolitan Transportation Plan and its Sustainable Communities Strategy will build upon previous successes and will include expanded public outreach, enhanced environmental justice analysis, and coordination with the public and private partners. These efforts and others are described in the attached report describing how SACOG will develop a plan that complies with SB 375.

If you have any questions about the SACOG Technical Methodology, please feel free to contact me at (916) 321-9000.

Sincerely,

Mike McKeever
Executive Director

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Enclosure

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Process Overview: Updating Regional Transportation Plan and Developing SCS

SACOG's MTP update is proceeding on three tracks: framing assumptions and constraints, public participation and input, and technical tools and data.

Framing Assumptions and Constraints

Regional Growth Projections

The total amount of growth in the region through 2035 is one of the first components needed to develop the Regional Transportation Plan. These projections of employment, population, and households are developed by Stephen Levy of the Center for Continuing Study of the California Economy. Mr. Levy has worked with SACOG since the Blueprint Vision Study in 2002.

This set of projections was initially used in the scenarios that SACOG provided to the ARB for the SB 375 target setting process. While the general trends on regional competitive strengths and weaknesses, demographics, and economic structure are expected to remain constant from past projections, there are some important changes. The impacts of the current housing and economic crisis, recent migration data, and state/national economic data are reflected in slower growth rates.

These projections were endorsed by the Board of Directors to be used in the Plan development. Final adoption of the projections will occur at the conclusion of the process, in order to provide flexibility in the planning process and to incorporate new data as it comes available. For instance, the Census Bureau will begin reporting results of the 2010 Census in early 2011 which we intend to utilize in the RTP update to the maximum extent feasible.

Another aspect of setting regional growth projections is to update the base, or starting year of the plan analysis. The many changes that occurred in the SACOG region from 2005 to 2008 have been included in order to have the best grounding from which to build the new plan.

The regional growth projections provide the starting point for alternative scenarios that form the basis of the learning and evaluation process that will be used in the RTP update. Just as the GHG target setting scenarios provided important information to the SACOG Board of Directors in their recommendation on regional GHG targets, so too will the RTP scenarios provide findings for the much broader RTP requirements and policy goals.

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Revenue Estimates

Revenue estimates for the RTP update were approved for release in May 2010¹. The revenue estimates took account of the lower projected regional growth.

Framework and Schedule

The schedule for this RTP update calls for action by the Board of Directors in December 2011. Leading up to this date of adoption, public outreach has been, and will be, conducted to solicit comments and suggestions for plan alternatives, performance measures, and policy objectives. Alternative scenarios are being developed and will be examined at a series of public workshops in October 2010, followed by development of a preferred draft alternative. The EIR of the RTP update preferred alternatives, and other alternatives, will be developed in early 2011. The EIR analysis will include the preferred draft alternative as the Sustainable Community Strategy and an alternative that could be used as the Alternative Planning Strategy, if the APS is needed. The SACOG Board of Directors adopted this framework and schedule earlier this year².

Public Participation and Input

The SACOG Public Participation Plan (PPP) will be used to guide our outreach efforts throughout the RTP update. SACOG will utilize its standing advisory committees, focus groups, workshops and public hearings to fully comply with, not only state and Federal requirements, but also regional needs and policies on adequate public engagement. The PPP is available on SACOG's web site. The application of the PPP to the RTP update was approved by the SACOG Board³.

Technical Tools and Data

Starting with its landmark regional "Blueprint" project, SACOG has developed a reputation for data-driven, technically based transportation planning, with an emphasis on using state-of-the-art modeling and analysis tools to inform the planning process. These tools and data are the foundation of connecting the land use policy, transportation system development, and transportation-source GHG emissions. The section below provides details on these tools and data, and how they relate to the update of the RTP and development of an SCS for the region.

¹ SACOG Board Transportation Committee on May 6, 2010.
<http://www.sacog.org/calendar/2010/05/06/transportation/>

² SACOG Board on April 5, 2010.
<http://www.sacog.org/calendar/2010/04/15/board/pdf/10%20-%20MTP%20Update.pdf>

³ *ibid.*

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Technical Tools, Models and Data for RTP

SACOG maintains and uses several technical planning and analysis tools to address three key components of transportation-source GHG production in the region.

- Land use planning and scenario analysis tools
- Travel demand modeling tools
- Emissions estimation tools

In addition to planning and analysis tools, regional monitoring and data programs provide a basis for establishment of analysis base years, tracking of growth and trends in the region, and validation and sensitivity testing of planning and analysis tools.

Base Year Update Process

SACOG systematically updated its land use and transportation monitoring datasets, and used these monitoring data to update the base year of its forecasting tools to Year 2008. Housing, employment and schools inventories were updated, using a range of data sources (Census data, building permits, commercially and publicly available employment datasets, aerial photos, county assessors' data, and other sources). SACOG's regional GIS street and bikeway centerline file, published transit schedules and maps, and aerial photos were used to update the highway and transit datasets for SACOG travel demand models to Year 2008. Traffic counts and transit passenger volume datasets were updated, and will be used for validation of travel demand modeling tools.

I-PLACE³S Land Use Scenario Planning and Analysis Tools

I-PLACE³S is a software tool that facilitates and integrated land use and transportation planning known as scenario planning. It provides a web-based platform from which to communicate ideas, store data, and analysis potential outcomes. I-PLACE³S is designed to support smart growth planning in regions, cities, and communities, and to be easily accessible to planners, policymakers, citizens, and students. Together, the scenario planning method and the GIS model allow an interactive, participatory analytical process to evaluate land use planning scenarios and their impact on a community and region. In addition to its use as a public workshop scenario planning and analysis tool, SACOG uses IPLACE3S for day-to-day management and maintenance of its base year and forecast year land use datasets.

SACSIM Travel Demand Modeling Tools

SACOG uses the Sacramento Activity-Based Travel Demand Simulation model (SACSIM) for analysis of travel demand associated with land use and transportation alternatives. SACSIM is a state-of-the-art regional travel demand model. It is unique in its use of parcel/point-level land use input data, and is one of a very few activity-based, demand simulation models in use by regional agencies in the U.S. SACSIM was the subject of a rigorous peer review in 2008, underwritten by the USDOT "Travel Model

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Improvement Program”⁴. Detailed documentation on the model is available from SACOG. A comprehensive update of SACSIM model documentation will be prepared during the course of the RTP update. SACOG’s “Sacramento Travel Model Users’ Group” will be consulted during the update of the model documentation.

In addition to the TMIP peer review, SACSIM has been evaluated for reasonable sensitivity to land use variables, fuel prices and auto operating costs, and transit fares. Additional sensitivity testing is planned, and described below in the “Model Improvement Plan” (MIP) section.

Off-Model Adjustments and Post-Processing

Through the SB375 GHG reduction target-setting process, each MPO on the state performed a self-assessment of modeling capabilities⁵. Through that process, SACOG identified several key exogenous and policy variables for which SACSIM is not reasonably sensitive. In the longer term, implementation of SACOG’s MIP will address these issues. In the near term, including this update of the RTP, modest post-processing of travel model outputs will be performed. The basic approaches SACOG will use were documented and submitted to CARB during the SB375 target-setting process⁶. These post-processing approaches will be re-visited, vetted and documented in concert with the update of the travel model for use in the RTP.

Emissions Modeling Tools

Regarding the tools for estimating transportation-source GHG, SACOG will use EMFAC2007, software which is developed and maintained by CARB, and is required for use in various emissions analyses SACOG performs (e.g. air quality conformity analyses for ozone pre-cursors, carbon monoxide, PM-10, and PM-2.5). Vehicle activity input files for EMFAC2007 will be developed using SACSIM, consistent with the approach used for development of regional emissions budgets. In addition to being the required software for regional emissions modeling in the SACOG region, EMFAC2007 is the only tool available for quantifying the “passenger vehicle” portion of GHG emissions, as required by SB375 and the GHG reduction target.

Off-Model Adjustments and Post-Processing

EMFAC2007 does not currently account for the reasonable implementation of the State’s vehicle efficiency policy (the Pavley law), and low-carbon fuel (LCF) standard. CARB has developed a post-processor to account for the reasonable implementation of these policies. Although not required to compute the SB375 GHG reduction for comparison to

⁴ The peer review report is available on:
http://tmip.fhwa.dot.gov/resources/clearinghouse/docs/tmip/peer_review/sacog/sacog_report.pdf

⁵ See the final documentation of the self-assessment, prepared by SACOG staff for presentation to the RTAC in May 2009. <http://www.arb.ca.gov/cc/sb375/rtac/meetings/050509/mpoassessmentupdate.pdf>

⁶ See “Description of SACOG Scenario Testing for SB375 Greenhouse Gas Reduction Target Setting”, June 14, 2010. <http://www.arb.ca.gov/cc/sb375/mpo/sacog/rtac-scenarios-sacog061410.pdf>

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the assigned regional target, use of the Pavley/LCF post-processor to EMFAC2007 is the only method to compute the total amount of transportation-source GHG, and the post-processor will be used to make this calculation.

Model Improvement Plans

Currently under way are improvements to I-PLACE³S land use/travel analysis functionality (the so-called “D’s”) in a team with UC Davis and Fehr & Peers, Inc. Other improvements are planned to add direct GHG estimation capabilities to I-PLACE³S.

In conjunction with the 2008 SACSIM peer review, and the aforementioned MPO model self-assessment. SACOG developed a multi-year MIP to address known areas of insensitivity for the current model. The MIP was submitted to the Strategic Growth Council as part of SACOG’s application for “Modeling Incentives” funding from SGC in September 2009⁷. SACOG received funding for enhancements to SACSIM’s representation of travel costs and transit facilities, as well as incorporation of robust transportation pricing analysis capabilities. A contractor for this work has been selected, and work will begin on this effort in Fall 2010. Although the project is unlikely to be fully complete in time to utilize for the preparation of the RTP update and associated CEQA work, any enhancements which are completed by January 2011 will be used in this ongoing update.

⁷ See SACOG SGC “Model Incentives” application and MIP summary at:
http://www.sgc.ca.gov/docs/funding/SACOG_Application.pdf